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SUBJECT:: Climate Change Text Suggestions

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TEXT:

The June 2001 National Academy Report, Climate Change Science: An Analysis of Some Key Questions, found that there remains a significant level of uncertainty in our understanding of the global climate system and the contribution of humans to an already dynamic, changing climate. Specifically, the National Academy found:

"Because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as tentative and subject to future adjustments (either upward or downward). Reducing the wide range of uncertainty inherent in current model predictions of global climate change will require major advances in understanding and modeling of both (1) the factors that determine atmospheric concentrations of greenhouse gases and aerosols, and (2) the so-called 'feedbacks' that determine the sensitivity of the climate system to a prescribed increase in greenhouse gases. There is also a pressing need for a global system designed for monitoring climate. The Committee generally agrees with the assessment of human-caused climate change presented in the IPCC Working Group I (WG I) scientific report, but seeks here to articulate more clearly the level of confidence that can be ascribed to those assessments and the caveats that need to be attached to them." (Page 1).

"Climate projections will always be far from perfect. Confidence limits and probabilistic information, with their basis, should always be considered as an integral part of the information that climate scientists provide to policy- and decision-makers. Without them, the IPCC SPM [Summary for Policymakers] could give the impression that the science of global warming is 'settled,' even though many uncertainties still remain. The emission scenarios used by the IPCC provide a good example. Human dimensions will almost certainly alter emissions over the next century. Because we cannot predict either the course of human populations, technology, or societal transitions with any clarity, the actual greenhouse gas emissions could either be greater or less than the IPCC scenarios. Without an understanding of the sources and degree of uncertainty, decisions-makers could fail to define the best ways to deal with the serious issue of global warming." (Page 22).

or -- something similar from EPA's own Climate Action Report (p.4 -- box entitled "The Science"):

Greenhouse gases are accumulating in the Earth's atmosphere as the result of human activities, causing global mean surface air temperature and subsurface ocean temperature to rise. While the changes observed over the last several decades are likely due mostly to human activities, we cannot rule out that some significant part is also a reflection of natural

variability.

Reducing the wide range of uncertainty inherent in current model predictions will require major advances in understanding and modeling of the factors that determine atmospheric concentrations of greenhouse gases and aerosols, and the feedback processes that determine the sensitivity of the climate system. Specifically, this will involve reducing uncertainty regarding:

the future use of fossil fuels and future emissions of methane,

the fraction of future fossil fuel carbon that will remain in the atmosphere and provide radiative forcing versus exchange with the oceans or next exchange with the land biosphere,

the impacts of climate change on regional and local levels,

the nature and causes of the natural variability of climate and its interactions with forced changes, and

the direct and indirect effects of the changing distribution of aerosols.

Knowledge of the climate system and of projections about the future climate is derived from fundamental physics, chemistry and observations. Data are then incorporated in global circulation models. However, model projections are limited by the paucity of data available to evaluate the ability of coupled models to simulate important aspects of climate. To overcome these limitations, it is essential to ensure the existence of a long-term observing system and to make more comprehensive regional measurements of greenhouse gases.

Evidence is also emerging that black carbon aerosols (soot), which are formed by incomplete combustion, may be a significant contributor to global warming, although their relative importance is difficult to quantify at this point. These aerosols have significant negative health impacts, particularly in developing countries.

While current analyses are unable to predict with confidence the timing, magnitude, or regional distribution of climate change, the best scientific information indicates that if greenhouse gas concentrations continue to increase, changes are likely to occur. The U.S. National Research Council has cautioned, however, that "because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as tentative and subject to future adjustments (either upward or downward)." Moreover, there is perhaps even greater uncertainty regarding the social, environmental, and economic consequences of changes in climate.

I have a few more materials that I only have hard copies of -- please reply with your fax number and I will send them over.

Thanks,

Bryan Hannegan
CEQ

